



SEQUENCE LISTING

<10> Ditzel, H.
Burton, D.
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<120> Autoantibodies to glucose-6-phosphate isomerase and their participation in autoimmune disease

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Trp Ala Ser Thr Arg Glu Ser Gly Val Pro Asp Arg Phe Ser Gly Ser
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Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Ala Glu
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Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr
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35 40 45
Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Thr Asp
50 55 60
Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr
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Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Thr Asp
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Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr
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50 55 60
Lys Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg
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35 40 45
Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln Leu
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35 40 45
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50 55 60
Lys Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg
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35 40 45
Gly Gly Val Ser Leu Ala Gln Ser Phe Gln Asp Arg Val Ser Leu Thr
50 55 60
Arg Asp Arg Ser Ser Asn Thr Val Phe Leu Glu Leu Ser Gly Leu Thr
65 70 75 80
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35 40 45
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50 55 60
Arg Asp Asn Ser Lys Asn Thr Ala Phe Leu Arg Met Asn Ser Gln Arg
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35 40 45
Arg Gly Thr Thr Asn Tyr Asn Arg Val Phe Gly Ser Arg Val Ser Met
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Ser Val Asp Met Ser Arg Ser Gln Phe Phe Leu Glu Leu Arg Asp Val
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35 40 45

Gly Pro Val Asn Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr
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Ala Asp Asp Ser Thr Asn Thr Ala Tyr Met Gly Leu Ser Ser Leu Arg
65 70 75 80
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<210> 95
 <211> 32
 <212> PRT
 <213> Homo sapiens

<400> 95
 Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
 1 5 10 15
 Leu Thr Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys
 20 25 30

<210> 96
 <211> 32
 <212> PRT
 <213> Homo sapiens

<400> 96
 Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr
 1 5 10 15
 Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys
 20 25 30

<210> 97
 <211> 32
 <212> PRT
 <213> Homo sapiens

<400> 97
Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15
Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys
20 25 30

<210> 98
<211> 32
<212> PRT
<213> Homo sapiens

<400> 98
Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15
Leu Thr Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys
20 25 30

<210> 99
<211> 32
<212> PRT
<213> Homo sapiens

<400> 99
Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Ser
1 5 10 15
Phe Thr Ile Ser Ser Leu Gln Pro Glu Asp Thr Gly Thr Tyr Tyr Cys
20 25 30

<210> 100
<211> 32
<212> PRT
<213> Homo sapiens

<400> 100
Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15
Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys
20 25 30

<210> 101
<211> 32
<212> PRT
<213> Homo sapiens

<400> 101
Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15
Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys
20 25 30

<210> 102
<211> 14
<212> PRT
<213> Homo sapiens

<400> 102
Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr Val Ala
1 5 10

<210> 103
 <211> 14
 <212> PRT
 <213> Homo sapiens

<400> 103
 Phe Gly Gly Gly Ala Lys Val Gly Ile Arg Arg Thr Val Ala
 1 5 10

<210> 104
 <211> 14
 <212> PRT
 <213> Homo sapiens

<400> 104
 Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala
 1 5 10

<210> 105
 <211> 14
 <212> PRT
 <213> Homo sapiens

<400> 105
 Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr Val Ala
 1 5 10

<210> 106
 <211> 14
 <212> PRT
 <213> Homo sapiens

<400> 106
 Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Arg Thr Val Ala
 1 5 10

<210> 107
 <211> 14
 <212> PRT
 <213> Homo sapiens

<400> 107
 Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Arg Thr Val Ala
 1 5 10

<210> 108
 <211> 14
 <212> PRT
 <213> Homo sapiens

<400> 108
 Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala
 1 5 10

<210> 109
 <211> 332
 <212> DNA
 <213> Homo sapiens

<400> 109
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cactttgtc	gtctgatgg	agtaataat	tctatata	atccgtgaag	ggccgattca	180
ccatctccaa	ggacaattct	aagaacacac	tgtatctgca	aatgaacagc	ctgagaattg	240
acgacacggc	tgtctattac	tgtgcgattt	ccctggtggg	aactaccgct	tttaactact	300
ggggccaggg	aaccctggtc	accgtctcct	ca			332
<210> 110						
<211> 331						
<212> DNA						
<213> Homo sapiens						
<400> 110						
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atagtcata	ccatgcactg	gttccgcca	gctccaggca	aggggctgg	gtgggtggca	120
cttatattct	atgatggaa	gtaataat	tatgcagact	ccgtgaaggg	ccgattcacc	180
atctccagag	acaatccaa	gaacacgctg	tatctgcaat	tgagcagcct	aagacctgag	240
gacacggctg	tctattattg	tacgaattcc	gaggtggag	ctaccgc	tttgactactgg	300
ggccagggaa	ccctggtcac	cgtctcctca	g			331
<210> 111						
<211> 335						
<212> DNA						
<213> Homo sapiens						
<400> 111						
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gtggcagtt	tatcatatga	tggaaacaag	aaataactacg	cagactccgt	gaagggccgaa	180
ttcaccatct	ccagagacaa	ttccaagaac	actctatata	tgcaaatgaa	cagcctgaga	240
gttgaggaca	cggctgttta	ttactgtgcg	atttccatag	tgggaactac	cgcttttaac	300
tactggggcc	agggAACCT	gtcaccgtc	tcctc			335
<210> 112						
<211> 327						
<212> DNA						
<213> Homo sapiens						
<400> 112						
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agtgttttt	acacttccaa	caataagaac	tacttagctt	ggtaccagca	gaaaccaggc	120
cagcctctta	agttgctcat	ttactggca	tccacccggg	aatccggggt	ccctgaccga	180
ttcagtggca	gcgggtctgg	gacagattc	actctcacca	tcagcagcct	gcaggctgaa	240
gatgtggcag	tttattactg	tca	actat	tatgattcgt	acactttgg	300
aagctggaga	tcaa	acgtac	ttgtggct			327
<210> 113						
<211> 312						
<212> DNA						
<213> Homo sapiens						
<400> 113						
ccatccttcc	tgtctgc	atc	tgtggagac	agagtcacca	tcacttggcc	60
ggcattagca	gttatttagc	ctggtatc	ctaaaaccgg	ggaaagcccc	taagctcctg	120
atctatgctg	catccactt	gcaaa	gtccc	catca	ggttcagcgg	180
gggacagaat	tcactctcac	aataa	ggc	ggc	cagtgatct	240
tgtcaacagc	ttaatagtt	ccctctca	ttcggcggag	gggccaagg	ggggatcaga	300
cgaactgtgg	ct					312
<210> 114						
<211> 315						
<212> DNA						
<213> Homo sapiens						

<400> 114
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 ctcatctatg gtgcattccag cagggccact ggcattccag acaggttcag tggcagtggg 180
 tctgggacag acttcactt caccatcagc agactggagc ctgaagattt tgcagtgtat 240
 tactgtcagc agtatggtag ctcacccctgg acgttcggcc aagggaccaa ggtggaaatc 300
 aacgaactg tggct 315

<210> 115
 <211> 327
 <212> DNA
 <213> Homo sapiens

<400> 115
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 cagcctccata agttgcctat ttactggca tccacccggg aatccgggtt ccctgaccga 180
 ttcagtgccgca gcgggtctgg gacagattt acttcacca tcagcagcc gcaggctgaa 240
 gatgtggcag ttatatactg tcagcaatat tatgatcgtt acactttgg ccaggggacc 300
 aagctggaga tcaaacgaac tgtggct 327

<210> 116
 <211> 315
 <212> DNA
 <213> Homo sapiens

<400> 116
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 ctcatctatg gtgcattccag cagggccacc ggcattccag acagatttcag tggcagtgg 180
 tctgggacag atttcagttt caccatcagc agtgcagc ctgaagatac tggacatata 240
 tactgtcaac aatatgataa tgtccctgac actttggcc aggggaccag gctggagatc 300
 aacgaactg tggct 315

<210> 117
 <211> 312
 <212> DNA
 <213> Homo sapiens

<400> 117
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 ctcatctatg gtgcattccag tagggccact ggcattccag acaggttcag tggcagtgg 180
 tctgggacag acttcactt caccatcagc agactggagc ctgaagattt tgcagtgtat 240
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 cgaactgtgg ct 312

<210> 118
 <211> 315
 <212> DNA
 <213> Homo sapiens

<400> 118
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 ctcatctatg gtgcattccag cagggccact ggcattccag acaggttcag tggcagtgg 180
 tctgggacag acttcactt caccatcagc agactggagc ctgaagactt tgcagtttat 240
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 aacgaactg tggct 315

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<210> 119
<211> 342
<212> DNA
<213> Homo sapiens

<400> 119
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atgggaagaa tcaacccgac tggcgccggc gttagtctcg cacagagttt ccaggacaga      180
gtcagcctga ccaggacag gtcgtccaat acagtcttct tggaaactgag cggcctcacg      240
gaggaggaca cggccttata tttctgtgcg aggccccat ttaacatgat ccggaaacct      300
cttgacctct gggccaggc gacagtggtc accgtctcct ca      342

<210> 120
<211> 348
<212> DNA
<213> Homo sapiens

<400> 120
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gtctcacgtt ttagtgaaa tagtggaaac acattctacg cagactccgt gaaggggccgg      180
ttcaccatct ccagagacaa ttccaagaac acggcggttc tgcgaatgaa cagccagaga      240
gccgaagaca cggccgttta ttactgtgcg aaagatctgt cgagtggtgc atactactac      300
tacgggatgg acgtctgggg ccaagggacc acggtcaccc tctcctca      348

<210> 121
<211> 342
<212> DNA
<213> Homo sapiens

<400> 121
ggcccaggat tggtgaggcc atcacagacc ctatccctca cctgcactgt ctctccaggc      60
tccattaaag gtgatagtta cttctggagc tgggtccgtc agcccgtagg gaaggactg      120
gagtggatacg ggcgtatcta cggcagagg actaccaatt acaacccgtt tttcgggagt      180
cgagtcagta tgcgttgcg catgtccagg agtcagttt tcttggatgagatgtg      240
accggcccgac acacggccgt ctattactgt gcgagagaca aggggtccga atactcctac      300
tttgacccctt gggccaggc aatagtggtc aacgtcttctt ca      342

<210> 122
<211> 376
<212> DNA
<213> Homo sapiens

<400> 122
gggctgaggt gaagaaggct gggcctcgg tgaaggtctc ctgcagggtct tctggaggca      60
cattcagcag atatgttac agctgggtgc gacaggcccc tggacaagggtt cttgagtgg      120
tgggagggtt catccctccc ttgggtccag taaactacgc acagaagggtt cagggcagag      180
tcacgattac cgcggacgt tccacgaaca cagcttacat gggctgagc agcctgagat      240
ctggggacac ggccgtgtat tactgcgcga gagtggctta tgatggtagt ggctattaca      300
acaatatccc aaagatctac tactactctt acatggacgt ctggggcaaa gggaccacgg      360
tcaccgtgtc ctcagc      376

<210> 123
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> A synthetic flexible five amino acid tether.

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<400> 123
Gly Gly Gly Gly Ser
1 5